

03050105-10

(*Thicketty Creek*)

General Description

Watershed 03050105-10 (formerly 03050105-130) is located in Cherokee County and consists primarily of *Thicketty Creek* and its tributaries. The watershed occupies 100,759 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 56.0% forested land, 29.7% agricultural land, 9.6% urban land, 2.2% scrub/shrub land, 1.6% forested wetland, 0.7% water, and 0.2% barren land.

Thicketty Creek joins with Macedonia Creek to form Lake Thicketty at the top of the watershed. Thicketty Creek then accepts drainage from Thicketty Mountain Creek (Linder Creek), Clary Creek, Allgood Branch, and Irene Creek (Cole Creek) near the City of Gaffney. Little Thicketty Creek (Lake Rufus, Rocky Ford Creek, Cowpens Creek) enters Thicketty Creek next followed by Limestone Creek (Mill Creek, Skelton Creek) and Big Blue Branch (Blue Branch). North Goucher Creek and South Goucher Creek join in Hammett Lake to form Goucher Creek (Gum Root Creek), which flows into Thicketty Creek downstream of Big Blue Branch. Jones Creek (Martin Lake) enters Thicketty Creek next followed by Timber Ridge Branch, Minkum Creek (Polecat Creek), Crocker Branch, Luster Mill Creek, and Gilkey Creek. Gilkey Creek accepts drainage from Gaffney Country Club Lake, Blanton Creek, Peeler Branch, Spencer Branch (also known as Cartum Branch), Dry Fork Creek, Martin Branch, and Rocky Branch. Thicketty Creek drains into the Broad River. There are a total of 190.8 stream miles and 515.5 acres of lake waters in this watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RL-02301	RL02	FW	LAKE THICKETTY NEAR SE SHORE APPROX. 1.0 MI FROM MACEDONIA
B-342	W	FW	LAKE THICKETTY IN FOREBAY NEAR DAM
RL-03457	RL03	FW	LAKE THICKETTY IN FOREBAY NEAR DAM (B-342)
B-059	S/W	FW	IRENE CREEK AT S-11-307, 2.5 MI W OF GAFFNEY
B-095	S/W	FW	THICKETTY CREEK AT S-11-164
RS-04376	BIO/RS04	FW	LITTLE THICKETTY CREEK AT S-42-307, 1.2 MI NE OF COWPENS
B-128	S/W	FW	LIMESTONE CREEK AT S-11-301
B-133	S/BIO/W	FW	THICKETTY CREEK AT SC 18, 8.3 MI S OF GAFFNEY
RS-01028	RS01	FW	THICKETTY CREEK AT S-11-104 BIG PINE HUNT CLUB, 9.0 MI E OF
PACOLET			
B-334	W/BIO	FW	GILKEY CREEK AT S-11-231, 9 MI SE OF GAFFNEY
B-062	S/INT	FW	THICKETTY CREEK AT SC 211, 2 MI ABOVE JUNCTION WITH BROAD
RIVER			

Lake Thicketty - There are three SCDHEC monitoring stations (**RL-02301**, **B-342**, **RL-03457**) along Lake Thicketty and aquatic life and recreational uses are fully supported for all sites. The 2003 sediment sample revealed a very high concentration of cadmium at **RL-03457**, and a high concentration of chromium and copper. DDD, DDE (metabolites of DDT), and DDT were also detected in the sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Irene Creek (B-059) - Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity, and a significant decreasing trend in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform excursions.

Thicketty Creek – There are four SCDHEC monitoring stations along Thicketty Creek. At the furthest upstream site (***B-095***), aquatic life uses are fully supported, but recreational uses are partially supported due to fecal coliform bacteria excursions. Although there were pH violations at the next site downstream (***B-133***), aquatic life use is fully supported based on the macroinvertebrate data. There is also a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream at ***RS-01028***, aquatic life and recreational uses are fully supported. At the furthest downstream site (***B-062***), aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There are also significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Little Thicketty Creek (RS-04376) – Aquatic life uses are partially supported based on macroinvertebrate community data. A very high concentration of cadmium was measured in the 2004 sediment sample. Recreational uses are not supported due to fecal coliform bacteria excursions.

Limestone Creek (B-128) – Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity and a decreasing trend in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions.

Gilkey Creek (B-334) – Aquatic life uses are partially supported based on macroinvertebrate community data. There are also significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Recreational uses are fully supported.

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
CAMP LEA	11-N02
LAKE RUFUS	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
<i>PERMITTED FLOW @ PIPE (MGD)</i>	<i>COMMENT</i>

THICKETTY CREEK
CITY OF GAFFNEY/CLARY WWTP
PIPE #: 001 FLOW: 5.0

SC0031551
MAJOR DOMESTIC

MILL CREEK
HAMRICK MILLS/MUSGROVE MILLS
PIPE #: 001 FLOW: M/R

SCG250168
MINOR INDUSTRIAL

SPENCER BRANCH
BRIARCREEK SD II/UNITED UTILITIES
PIPE #: 001 FLOW: 0.020

SC0026409
MINOR DOMESTIC

SPENCER BRANCH TRIBUTARY
BRIARCREEK SD I/UNITED UTILITIES
PIPE #: 001 FLOW: 0.020

SC0023736
MINOR DOMESTIC

JONES CREEK
MEDLEY FARMS NPL SITE
PIPE #: 001 FLOW: 0.029

SC0046469
MINOR INDUSTRIAL

IRENE CREEK
TIMKEN COMPANY/GAFFNEY BEARING
PIPE #: 001 FLOW: M/R

SCG250205
MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME
FACILITY TYPE

PERMIT #
STATUS

PIEDMONT INDUSTRIAL SERV.
INDUSTRIAL

IWP-131

Land Application Sites

LAND APPLICATION SYSTEM
FACILITY NAME

ND#
TYPE

SPRAYFIELD
BLANTON'S SEPTIC

ND0080489
DOMESTIC

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

JO DEAN LEMMONS
K. LEMMONS

1496-21
SERICITE

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the City of Gaffney and the Town of Cowpens. Major growth is expected along the I-85 corridor, which stretches across the watershed, particularly in the area north of Gaffney. U.S. Hwy. 29 and a rail line also cross the watershed from Spartanburg through Cowpens to Gaffney.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Thicketty Creek** and three tributaries – Irene Creek, Limestone Creek, and Gilkey Creek, at water quality monitoring sites **B-059** (Irene), **B-128** (Limestone), **B-334** (Gilkey), **B-095**, **B-133**, and **B-062**. Two currently active facilities that have fecal coliform limits in their NPDES permits discharge into Thicketty Creek and two facilities discharge into a tributary of Gilkey Creek. The watersheds of Irene and Limestone Creeks are within Municipal Separate Storm Sewer System (MS4) designated areas for the City of Gaffney. A very small part of the Thicketty Creek watershed is with a MS4 designated area for Cherokee County. Possible sources of fecal coliform bacteria in Irene and Limestone Creeks include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. Possible sources in Thicketty and Gilkey Creeks include failing onsite wastewater disposal systems, cattle in creek, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Irene Creek of 70% (B-059), Limestone Creek of 72% (B-128), Gilkey Creek of 68% (B-334), Thicketty Creek of 68% (B-095), 49% (B-133), and 85% (B-062) in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.